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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,880	06/09/2005	Ryoichi Komiya	F-8628	8736

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EXAMINER	
MOWLA, GOLAM	

ART UNIT	PAPER NUMBER
4132	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,880	KOMIYA ET AL.	
	Examiner	Art Unit	
	Golam Mowla	4132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/23/2005 and 06/13/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Comments

2. Claims 14-16 and 21-23 are product-by-process claims, therefore they are not limited to the manipulation of the recited method of how to form the network structure such as heating, mixing, reacting. The determination of patentability is based on the product, and not on the method (method of how to form the network structure such as heating, mixing, reacting) of making the product. See MPEP 2113 [R-1] Product-by-Process Claims. See also *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Objections

3. Claim 17 is objected to because of the following informalities: claim 17 depends on claim 17. It is suggested said claim be changed to depend on any one of the preceding claims. Appropriate correction is required.

4. Claims 21 and 29 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 recites the limitation "heterocyclic compound" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested said claim be changed to depend on claim 27. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 11, 14-17, and 24-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Wariishi et al. (US 6376765).

Regarding claims 11, 14, 15, and 17, Wariishi discloses a dye-sensitized solar cell comprising a transparent substrate (transparent substrate 50a, fig. 1; Col. 22, lines 13-37), a transparent electrically-conductive membrane (transparent electrically conductive layer 10a, fig. 1; Col. 22, lines 13-37) formed (see fig. 1 which shows that 10a is formed on 50a) on the surface of the transparent substrate (50a), an electrically-conductive substrate (top transparent substrate 50a, fig. 1; Col. 22, lines 13-37) disposed opposed to the transparent electrically-conductive membrane (10a), a porous semiconductor layer having a

dye adsorbed thereto (photosensitive layer 20 comprising semiconductor particles 21 sensitized by a dye 22, Col. 22, lines 13-19; see also fig. 1) and an electrolyte (charge transport layer 30 containing electrolyte composition, Col. 55, lines 1-10, Col. 22, lines 13-37; see also fig. 1) interposed between said transparent electrically-conductive membrane (10a) and said electrically-conductive substrate (top 50a), said electrolyte comprising a molten salt ("The electrolyte composition ... comprises...a salt having a low melting point, a so-called molten salt", Col. 5, lines 26-38) incorporated in a network structure (The electrolyte composition is gelled or solidified by a cross-linking reaction of a polymer, Col. 19, lines 53-57) obtained by crosslinking at least one kind of Compound A having one or more isocyanate groups per molecule (cross-linking agent…acyl isocyanates; Col. 21, lines 53-57) with at least one kind of Compound B having one or more amino groups per molecule (pyridine group; Col. 21, lines 44-57).

It is Examiner's position that nitrogen containing polymer such as pyridine has an amino group, either a secondary or tertiary amino group.

Network is an interconnected or interrelated chain, group, or system (Dictionary definition of "network" provided by Merriam-Webster Online Dictionary). Since the crosslink interconnects the isocyanate and amino groups, Wariishi inherently discloses that the cross-linking reaction of polymers allows forming a network structure.

Regarding claim 16, Wariishi further discloses that the electrolyte comprises an oxidation-reduction pair (formula 1 on Col. 5, line 38 shows a

positive cation and negative anion as the oxidation-reduction pair; See also Col. 7, lines 8-15 and Col. 55, lines 51-54).

Regarding claim 24, Wariishi further discloses that molten salt comprises a salt having a melting point of lower than room temperature (Col. 5, lines 41-43)

Regarding claim 25, Wariishi further discloses that molten salt takes part in the production of an oxidation-reduction pair (formula 1 on Col. 5, line 38 shows a positive cation and negative anion as the oxidation-reduction pair; See also Col. 7, lines 8-15, and Col. 55, lines 51-54)

Regarding claims 26-28, Wariishi further discloses that molten salt has a pyridinium or imidazolium heterocyclic compound as cation (Col. 7, line 55 – Col. 8, line 60) containing quaternary nitrogen (see formula 4 and 5 on Col. 8).

Regarding claim 29, Wariishi further discloses that the molten salt has an iodide ion as anion (Col. 7, lines 8-14).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wariishi as applied to claim 11 above, and further in view of Takaoka et al. (US 6589383).

Regarding claim 12, Wariishi discloses a dye-sensitized solar cell as discussed above for claim 11.

Wariishi is silent as to whether at least one of said compound A and said compound B comprises a polymer structure having a molecular weight of from 500 to 100,000.

Takaoka teaches the crosslinking polymer structure involved in forming gel electrolyte having a molecular weight of 20,000 or less, in solid electrolyte is 5000 - 20,000 (Col. 15 lines 52-58). The ranges of molecular weight of 20,000 or less for gel electrolyte and 5000 - 20,000 for solid electrolyte are well within the claimed range of 500 - 50,000 for gel electrolyte, and 500 - 20,000 for solid electrolyte. Takaoka uses a low molecular weight polymer because it allows for a reduced difficulties in handling the polymer (Col. 15, lines 52-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the specified molecular weight of Takaoka in the dye-sensitized solar cell of Wariishi, because it allows for a reduced difficulties in handling the polymer, as taught by Takaoka.

Regarding claim 13, Wariishi discloses a dye-sensitized solar cell as discussed above for claim 11.

Wariishi is silent as to whether a part or whole of the polymer structure of said Compound A and said Compound B comprises one or more selected from the group consisting of polyether, polyester, polycaprolactone, polysiloxane, polyolefin, polybutadiene, polyisoprene, polycarbonate and polyphosphazene.

Takaoka teaches the polymer structure, either entirely or partially, is one or more selected from a group consisting of polycarbonate (See '383 col. 6 line 48), polyester (Col. 6, lines 48-49), polyether (Col. 6 lines 64-66 and Col. 7 lines 1-5), polysiloxane (See formula B-1). Takaoka also teaches using polyether that has formulae equivalent to applicant's formula (I) (Col. 7 lines 1-5). Takaoka uses the specified polymer because it provides for an excellent ionic conductivity (Col. 1, lines 35-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the specified polymer structure of Takaoka in the dye-sensitized solar cell of Wariishi, because it allows for an excellent ionic conductivity, as taught by Takaoka.

11. Claim 18-23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wariishi in view of Yamaguchi (JP 2002-184478, refer to online translation) and Takaoka.

Regarding claims 18-21, and 23, Wariishi discloses a dye-sensitized solar cell comprising a transparent substrate (transparent substrate 50a, fig. 1; Col. 22, lines 13-37), a transparent electrically-conductive membrane (transparent

electrically conductive layer 10a, fig. 1; Col. 22, lines 13-37) formed (see fig. 1 which shows that 10a is formed on 50a) on the surface of the transparent substrate (50a), an electrically-conductive substrate (top transparent substrate 50a, fig. 1; Col. 22, lines 13-37) disposed opposed to the transparent electrically-conductive membrane (10a), a porous semiconductor layer having a dye adsorbed thereto (photosensitive layer 20 comprising semiconductor particles 21 sensitized by a dye 22, Col. 22, lines 13-19; see also fig. 1) and an electrolyte (charge transport layer 30 containing electrolyte composition, Col. 55, lines 1-10, Col. 22, lines 13-37; see also fig. 1) interposed between said transparent electrically-conductive membrane (10a) and said electrically-conductive substrate (top 50a), said electrolyte comprising a molten salt ("The electrolyte composition ... comprises...a salt having a low melting point, a so-called molten salt", Col. 5, lines 26-38) incorporated in a network structure (The electrolyte composition is gelled or solidified by a cross-linking reaction of a polymer, Col. 19, lines 53-57) obtained by crosslinking at least one kind of Compound A having one or more isocyanate groups per molecule (cross-linking agent…acyl isocyanates; Col. 21, lines 53-57) with a nitrogen containing group (pyridine group; Col. 21, lines 44-57).

Network is an interconnected or interrelated chain, group (Dictionary definition of "network" provided by Merriam-Webster Online Dictionary). Since the crosslink interconnects the isocyanate and amino group, Wariishi inherently discloses that the cross-linking reaction of polymers allows forming a network structure.

Wariishi is silent as to whether the network structure is obtained by crosslinking disclosed isocyanate group with at least one compound C having one or more carboxyl groups and/or hydroxyl groups.

Yamaguchi discloses a photoelectric conversion device wherein the crosslinked polymer is obtained by a reaction of hydroxyl group with the isocyanate group (see abstract). Yamaguchi uses a crosslinked polymer obtained by reacting hydroxyl and isocyanate groups because it allows for a device with an excellent durability (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize a crosslinked polymer of Yamaguchi obtained by reacting carboxyl and hydroxyl groups in the electrolyte of Wariishi, because it allows for a device with an excellent durability, as taught by Yamaguchi.

Wariishi is also silent as to whether the at least one of said Compound A and said Compound C comprises a polymer structure having a molecular weight of from 500 to 100,000.

Takaoka teaches the crosslinking polymer structure involved in forming gel electrolyte having a molecular weight of 20,000 or less, in solid electrolyte is 5000 - 20,000 (Col. 15 lines 52-58). The ranges of molecular weight of 20,000 or less for gel electrolyte and 5000 - 20,000 for solid electrolyte are well within the claimed range of 500 - 50,000 for gel electrolyte, and 500 - 20,000 for solid electrolyte. Takaoka uses a low molecular weight polymer because it allows for a reduced difficulties in handling the polymer (Col. 15, lines 52-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the specified molecular weight of Takaoka in the dye-sensitized solar cell of Wariishi, because it allows for a reduced difficulties in handling the polymer, as taught by Takaoka.

Wariishi is also silent as to whether a part or whole of the polymer structure of said Compound A and said Compound B comprises one or more selected from the group consisting of polyether, polyester, polycaprolactone, polysiloxane, polyolefin, polybutadiene, polyisoprene, polycarbonate and polyphosphazene.

Takaoka teaches the polymer structure, either entirely or partially, is one or more selected from a group consisting of polycarbonate (See '383 col. 6 line 48), polyester (Col. 6, lines 48-49), polyether (Col. 6 lines 64-66 and Col. 7 lines 1-5), polysiloxane (See formula B-1). Takaoka also teaches using polyether that has formulae equivalent to applicant's formula (I) (Col. 7 lines 1-5). Takaoka uses the specified polymer because it provides for an excellent ionic conductivity (Col. 1, lines 35-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the specified polymer structure of Takaoka in the dye-sensitized solar cell of Wariishi, because it allows for an excellent ionic conductivity, as taught by Takaoka.

Regarding claim 22, Wariishi further discloses that the electrolyte comprises an oxidation-reduction pair (formula 1 on Col. 5, line 38 shows a

positive cation and negative anion as the oxidation-reduction pair; See also Col. 7, lines 8-15 and Col. 55, lines 51-54).

12. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wariishi as applied to claim 11 above, and further in view of Sugihara et al. (US 6274806).

Wariishi discloses a dye-sensitized solar cell as discussed above for claim 11. Wariishi further discloses that the semiconductor layer has a specific surface area of 2 m^2/g (Col. 26, lines 14-22).

Wariishi is silent as to whether the semiconductor layer has a specific surface area of from 10-200 m^2/g.

Sugihara discloses a dye-sensitized solar cell (Col. 1, lines 33-37) wherein the semiconductor layer has a specific surface area of 100 m^2/g. Sugihara uses the specified surface area because this allows for a solar cell with high performance (Col. 5, lines 38-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the specific surface area of Sugihara in the dye-sensitized solar cell of Wariishi, because this allows for a solar cell with high performance, as taught by Sugihara.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined

application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14-22, 32-43 and 50-63 of copending Application No. 10/473,464.

Although the conflicting claims are not identical, they are not patentably distinct from each other because of the claims of the copending Application encompass the limitations of the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claims 24-29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14-22, 32-43 and 50-63 of copending Application No. 10/473,464 in view of Wariishi.

Regarding claim 24, the copending application claims a dye-sensitized solar cell as discussed above for claim 1.

The copending Application does not claim whether the molten salt comprises a salt having a melting point lower than room temperature.

Wariishi discloses a dye-sensitized solar cell (Col. 22, lines 8-37, fig. 1) wherein the molten salt comprises a salt having a melting point of lower than room temperature (Col. 5, lines 41-43). Wariishi uses a molten salt having a melting point of lower than room temperature because it allows for an electrolyte with excellent charge-transporting capability (Col. 1, lines 58-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize molten salt of Wariishi, which has a melting point of lower than room temperature, in the dye-sensitized solar cell of copending Application, because it allows for an electrolyte with excellent in durability and a charge-transporting capability, as taught by Wariishi.

Regarding claim 25, the copending application claims a dye-sensitized solar cell as discussed above for claim 1.

The copending Application does not claim whether the molten salt takes part in the production of an oxidation-reduction pair.

Wariishi discloses a dye-sensitized solar cell (Col. 22, lines 8-37, fig. 1) wherein the molten salt takes part in the production of an oxidation-reduction pair (formula 1 on Col. 5, line 38 shows a positive cation and negative anion as the oxidation-reduction pair; See also Col. 7, lines 8-15, and Col. 55, lines 51-54). Wariishi uses a molten salt that takes part takes part in the production of an oxidation-reduction pair because it allows for an electrolyte with excellent charge-transporting capability (Col. 1, lines 58-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize molten salt of Wariishi, which takes part in the production of an oxidation-reduction pair, in the dye-sensitized solar cell of the copending Application, because it allows for an electrolyte with excellent in durability and a charge-transporting capability, as taught by Wariishi.

Regarding claim 26-28, the copending application claims a dye-sensitized solar cell as discussed above for claim 1.

The copending Application does not claim whether the molten salt has a pyridinium or imidazolium heterocyclic compound as cation containing quaternary nitrogen.

Wariishi discloses a dye-sensitized solar cell (Col. 22, lines 8-37, fig. 1) wherein the molten salt has a pyridinium or imidazolium heterocyclic compound as cation (Col. 7, line 55 – Col. 8, line 60) containing quaternary nitrogen (see formula 4 and 5 on Col. 8). Wariishi uses a molten salt with a pyridinium or imidazolium heterocyclic compound as cation containing quaternary nitrogen, because it allows for an electrolyte with excellent in durability and a charge-transporting capability (Col. 1, lines 58-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize molten salt of Wariishi, which has a pyridinium or imidazolium heterocyclic compound as cation containing quaternary nitrogen, in the dye-sensitized solar cell of copending Application, because it allows for an electrolyte with excellent in durability and a charge-transporting capability, as taught by Wariishi.

Regarding claim 29, the copending application claims a dye-sensitized solar cell as discussed above for claim 1.

The copending Application does not claim whether the molten salt has an iodide ion as anion.

Wariishi discloses a dye-sensitized solar cell (Col. 22, lines 8-37, fig. 1) wherein the molten salt has an iodide ion as anion (Col. 7, lines 8-14). Wariishi uses a molten salt that has an iodide ion as anion because it allows for an electrolyte with excellent in durability and a charge-transporting capability (Col. 1, lines 58-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize molten salt of Wariishi, which has an iodide ion as anion, in the dye-sensitized solar cell of copending Application, because it allows for an electrolyte with excellent in durability and a charge-transporting capability, as taught by Wariishi.

This is a provisional obviousness-type double patenting rejection.

16. Claim 30 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14-22, 32-43 and 50-63 of copending Application No. 10/473,464 in view of Sugihara.

The copending application claims a dye-sensitized solar cell as discussed above for claim 1.

The copending Application does not claim whether the semiconductor layer has a specific surface area of from 10-200 m^2/g.

Sugihara discloses a dye-sensitized solar cell (Col. 1, lines 33-37) wherein the semiconductor layer has a specific surface area of 100 m^2/g. Sugihara uses the specified surface area because this allows for a solar cell with high performance (Col. 5, lines 38-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the specific surface area of Sugihara in the dye-sensitized solar cell of the copending Application, because this allows for a solar cell with high performance, as taught by Sugihara.

This is a provisional obviousness-type double patenting rejection.

Correspondence/Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Golam Mowla whose telephone number is (571)270-5268. The examiner can normally be reached on Monday to Friday, 8 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571)272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./
Examiner, Art Unit 4132

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 4132